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IWAKU: NEWS AND MARKETPLACE APPLICATION BASED
ON ANDROID TO MAXIMAZE FISHERIES SECTOR
DEVELOPMENT

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Minor Thesis

Presented in Partial Fulfillment of the Requirements
for the Degree of Bachelor of Economics and Business



INTERNATIONAL PROGRAM IN ECONOMICS

ECONOMICS AND BUSINESS FACULTY

BRAWIJAYA UNIVERSITY

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Minor thesis under the title;

"IWAKU: NEWS AND MARKETPLACE APPLICATION BASED ON ANDROID TO MAXIMAZE FISHERIES SECTOR DEVELOPMENT"

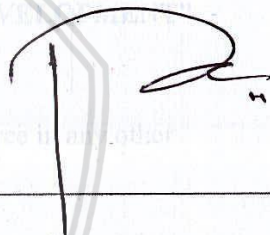
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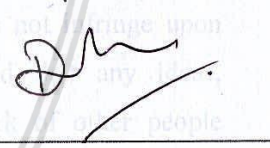
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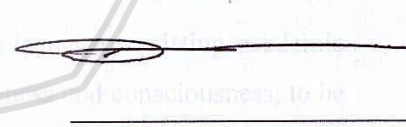
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Malang, 18th December 2018

Islamudin Setiawan

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IWAKU: NEWS AND MARKETPLACE APPLICATION BASED ON ANDROID TO MAXIMAZE FISHERIES SECTOR DEVELOPMENT

By:

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ABSTRACT

This study aims to educate the fishermen on a median basis through IWAKU application media using IWAKU applications of fishermen and fish farmers can get information about fish from the nursery stage until the enlargement. Through this media the authors hope the fishermen and fish farmers can increase fish production or fish catch in thesea

This study uses the lean startup method commonly used in building startup in the early stages.

The benefits of this study indicate that the fish sector has enormous potential especially in Indonesia, if there is a new innovation in this fish sector it will be very helpful in maximizing the potential, through IWAKU will provide the most complete news portal about fish and make IWAKU as a fish marketplace.

Keywords: *IWAKU, Startup, Application, Fish Marketplace, Fish Potential*

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ABSTRACT

Penelitian ini bertujuan untuk mendidik nelayan secara median melalui media aplikasi IWAKU menggunakan aplikasi IWAKU nelayan dan peternak ikan dapat memperoleh informasi tentang ikan dan bibit ikan sampai pembesaran. Melalui media ini penulis berharap nelayan dan pembudidaya ikan dapat meningkatkan produksi ikan mereka dan menangkap ikan di laut.

Penelitian ini menggunakan metode lean startup yang biasa digunakan dalam membangun startup pada tahap awal.

Manfaat dari penelitian ini menunjukkan bahwa sektor perikanan memiliki potensi yang sangat besar terutama di Indonesia, jika ada inovasi baru di sektor ini akan sangat membantu dalam memaksimalkan potensi, melalui IWAKU akan memberikan portal berita yang paling lengkap tentang ikan dan membuat IWAKU sebagai pasar ikan.

Kata kunci: IWAKU, Startup, Aplikasi, Pasar Ikan, Potensi Ikan

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CHAPTER I

INTRODUCTION

Background

Globalization is a natural thing happening to a country. Globalization also contributes to the development of aspects of life in the country, one of which is on technology and economics. The development of technology in Indonesia today is very rapid, especially in digital technology, it is characterized by many emerging ideas of innovation in the digital world that not only serves to seek information, but as a means of selling and buying online is very practical and efficient. This also affects the economic development in Indonesia, the easier the people to buy and sell transactions, therefore increasing the amount of consumption made by the people in Indonesia. Classical economic theory states that economic growth is determined by factors of production such as capital, labor, and technology. On the other hand, Keynesian theory states that the growth of national income is determined by the amount of consumption spending, government spending, investment and net exports. The implementation of both concepts and theories (Classics and Keynesians) can be used to calculate economic growth at both national and regional macroeconomic (provincial, district / city) scales. Therefore, the development of technology and public consumption is related to the economic development in Indonesia.

One of the innovations of today's digital technology is startup. Startup is a startup company. Business startup is more identical business that smells of technology, web, and internet are related to that sphere. Startup business grew in the late 90s to 2000. In Indonesia alone startup development is quite good. Every year, many new startups' founders are popping up in Indonesia. According to

dailysocial.net, there are currently at least more than 1500 local startups in Indonesia. The potential of internet users in Indonesia is increasing from year to year is certainly a good potential to establish a Startup. According to Rama Mamuaya, CEO of dailysocial.net, Startup in Indonesia is classified into three groups: Startup game creator, Startup educational app and Startup trading such as e-commerce and information.

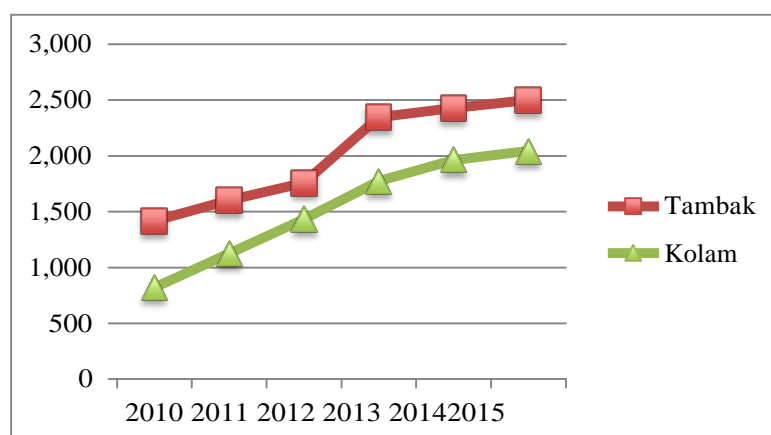
Startup trade in Indonesia has been very accepted by the community, for example Startup on the field of clothing (life style), food (daily consumption), and boards (property). However, startup in the fishery sector is still no one to start, but when viewed from the number of fishery production in Indonesia (dike and pond sub-sector) continues to increase from year to year. This can be proved by Table 1.1 and Figure 1.1:

Table 1.1 Development of Fishery Production by Sub Sector (thousand tons), 2010-2015

Subsector	2010	2011	2012	2013	2014	2015
Dike	1,416	1,603	1,757	2,345	2,428	2,499
Pond	820	1,127	1,434	1,774	1,964	2,043

Source: Indonesian Central Agency of Statistics (BPS). Data processed, 2017

Figure 1.1 Graph of Fishery Production Development by Sub Sector (thousand tons) in 2010 - 2015



Source: Indonesian Central Agency of Statistics (BPS). Data processed, 2017

By looking at the increasing number of fisheries production and the huge startup opportunities that are specific to fisheries, therefore the authors make a special startup for the fishery world. The platform from startup itself is education for fish farmers, buying and selling, and government.

The development of the digital world / online in the current era is very rapidly in the few years behind many emerging new innovations in the online world in the current process online is not only used as a search for information alone but now many emerging innovations using the online world into a means of buying and selling products. The previous sale and purchase is done physically or directly.

This can not be separated from the increasing public chaos and the depletion of community time in general to do more activities such as shopping at the mall, buy food directly on the spot, or see the property you want to buy.

The biggest problem for farmers in recent years is the lack of easy access either in terms of peasant technology or the latest government programs to progress in fish farming. This is a very important issue if we remember the huge level of fish farming risk if it fails, farmers find it difficult to gain access or the latest developments on their government programs will be difficult to synergize and will be difficult to develop.

This causes the unstable price of the fish because if the fish stock is excessive then the price to be offered will be very cheap so otherwise if the fish stock is small then the fish price will be very high, this is because the farmers do not know correctly the price of fish in the market and the farmers it is difficult to regulate livestock management.

From the exposure, the researchers create a startup namely 'IWAKU. Through the IWAKU startup, there will be a solution to reduce the distance between farmers, buyers and the government. And through this startup also the

farmers will always get the latest innovations or the latest cultivation program to improve the quality of farm produce.

Problems of Study

From the description of the above background, the authors formulate the problem as follows:

1. What is the potential for the development of the fish sector?
2. How does the concept of IWAKU application not only in promoting local products but as a liaison between farmers with buyers?
3. How is application deployment strategy of IWAKU?

Objective of Study

Based on background and problem formulation, the purpose of this research are:

1. Knowing the potential and market of fish.
2. Knowing the concept and characteristics of the IWAKU application not only in promoting local products but as a liaison between farmers and buyers.
3. Knowing the application implementation strategy of IWAKU startup.

Significance of Study

The results of this study are expected to provide benefits for:

1. Practical Benefits

Being one source of news for farmers and the world community of fish potential in order to stimulate young generation to develop this potential together and become a direct liaison between farmers with

major buyers. Therefore become a solution and communication innovation between farmer and buyer directly.

2. AcademicBenefits

Can be a solution and become innovation for the development of fish farming with appropriate and efficient.



CHAPTER II

LITERATURE REVIEW

Startup

Startup companies are corporate or temporary organizations designed to find repetitive and scalable business models. These companies, generally newly created, are in a development and research phase for the market. The term became popular internationally since dot.com bubble was rampant and a large number of companies were established. Lately, the term startup has been attributed to most technology businesses designed for high-growth. Paul Graham, founder of one of the best startup accelerators in the world, defines startup as a company designed to grow fast. Although newly established does not mean to be a startup company. Creating startup companies also does not have to be always in the scope of technology, or take venture funds. The only important thing is the growth of everything else we are associated with startups always followed from growth /growth.

The Evolution of a StartupCompany

Startup companies can come in many forms, but the phrase 'startup companies' is often associated with high-growth technology-oriented companies. Investors are generally most interested in new companies differentiated by risk / reward profiles and scalability. That is, they have low bootstrapping costs, high risk, and potential returns on higher investments. Successful startups are usually more measurable than established businesses, in the sense that they can potentially grow rapidly with limited investments in capital, labor or land.

Globalization

Yuniarto (2014) stated that globalization has several major studies that comprise:

1. Regionalism: The Effort of Regional Integration into One Entity.

The hallmark of globalization is that the world and markets are now integrated and connected to one another within an environment.

2. Impact of Investment Marriage and Trade Liberalization.

Jan A. Scholte (2000) describes the definition of globalization as liberalization which is the process of eliminating economic and trade barriers to an unlimited and open world.

Entrepreneurship

The word 'entrepreneurship' may already be familiar in the ears of society, but not many understand the meaning of the word entrepreneurship itself. Understanding of entrepreneurship by Kasmir is a courageous soul who dares to take risks to open a business on various occasions. In addition, Harvey Leibenstein said that the field of entrepreneurship includes the various activities necessary to implement and create the company at a time when the market has not yet been established or has not been clearly identified, or some component of its production function has not been fully identified. Arif F. Hadipranata, an entrepreneur, argues that entrepreneur is a person who takes the risks needed to manage and manage all matters as well as receive a number of financial and non-financial benefits.

Maslow's Hierarchy of Needs & Motivation

An American psychologist, Abraham Maslow conducted research to understand the basic characteristics of a human being. Maslow summed up his research results in the form of a hierarchy of human needs. This theory is well known and influential, especially in the business world. In fact, this theory is much used as a foothold for people who try to understand about motivation.

Maslow (1943) said that human needs are five levels, arranged hierarchically and have different values of satisfaction and different levels of effort. The five levels of needs are:

- a. Physiological Needs: among other hunger, thirst, and other bodily needs.
- b. Security Needs: including safety and protection against physical and emotional losses.
- c. Social Needs: includes affection, belonging, acceptance and friendship
- d. Needs Award: includes internal respect factors such as autonomy, achievement, self-esteem. Factors of external respect include status, recognition and attention.
- e. Needs Self-actualization: in the form of recognition of the capacity of knowledge, skills, and potentials it has.

Hygiene Theory of Frederick Herzberg

This theory was proposed by Frederick Herzberg in 1966 which is the development of Maslow's hierarchy of needs theory. Herzberg's theory provides two important contributions to the organization's leadership in motivating employees. First, this theory is more explicit than Maslow's hierarchy of needs

theory, particularly concerning the relationship between needs in job performance. Secondly, this framework generates an application model, the enrichment of work (Leidecker and Hall in Timpe, 1999:13).

Based on the results of research on American accountants and engineers from various Industries, Herzberg developed the theory of two-factor motivation (Cushway and Lodge, 1995: 138). According to this theory there are two factors that affect one's work conditions, namely the factor of satisfaction (motivation factor) is also called the satisfier or intrinsic motivation and health factors (hygienes), also called dissatisfier or extrinsic motivation. Herzberg's theory sees that there are two factors that encourage motivated employees, namely intrinsic factors, the driving force that arises from within each person, and the extrinsic factor that is the impetus that comes from outside the person, especially from the organization where he works.

So intrinsically driven employees will enjoy jobs that enable them to use their creativity and innovation, work with high levels of autonomy and do not need to be closely monitored. Satisfaction here is not primarily associated with the acquisition of material things. Conversely, those who are more driven by extrinsic factors tend to look at what the organization gives them and its performance is directed toward obtaining the things it wants from the organization (in Sondang, 2002: 107).

The motivational factors according to Herzberg are: the work itself (self work), achievement, advancement, recognition, responsibility. While hygienic factors consist of: compensation, working conditions, status, supervision, relationships between people, and corporate wisdom. More details of Herzberg's Two Factor Theory (Herzberg's Two Factor Theory) theory cited by Luthas (1992: 160) as follows:

According to Herzberg the hygienic / extrinsic factor factor will not encourage employees' interest to perform well, but if these factors are deemed unsatisfactory in many ways such as inadequate salaries, unfavorable working conditions, they may be a source of potential dissatisfaction (Cushway& Lodge, 1995: 139). While the motivation/intrinsic factor factor is a factor that encourages the spirit to achieve higher performance. Thus satisfaction of high-level needs (motivational factors) is more likely to be a person of high performance than lower needs satisfaction (hygienis) (Leidecker& Hall in Timpe, 1999: 13). From Herzberg's theory, money/salary is not included as a motivational factor and is criticized by experts. Blue-collar jobs are often done by them not because of the intrinsic factor they get from the job, but because the work can meet their basic needs (Cushway& Lodge 1995: 139). Research conducted by Schwab, De Vitt and Cummings in 1971 has proven that even extrinsic factors can have an effect on motivating high performance (Grensing in Timpe, 1999: 81).

LocalProduct

Products are something that manufacturers offer to be noticed, requested, sought, purchased, used, or consumed by the market as a fulfillment of the needs or desires of the market concerned. Conceptually the product is a subjective understanding of the producer of something that can be offered, as an effort to achieve organizational goals through the fulfillment of consumer needs and desires, in accordance with the competence and capacity of the organization and the purchasing power of the market (Tjiptono, 2002). While the local product itself is a product that comes from within the country that is managed both individuals and business groups. Local products owned by the region have unique and distinctive characteristic does not close the possibility to compete in overseas

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market (Marlina, 2015: 106).

Sustainable Development Goals

The World Commission on Environment and Development (WECD) defines sustainable development as development that meets the needs of today's generations without compromising the ability of future generations to meet their needs (An-Naf, 2005).

Sustainable development can be implemented using its rules (Djajadiningrat, 1992; Pearce and Warford, 1993), namely:

- Equity and Justice
- Integrative Approach (Integrative Approach)
- Long Term Perspective (Long Term Perspective)
- Ecological Sustainability (Ecological Sustainability)
- Economic Sustainability
- Social-Cultural Sustainability
- Political Sustainability
- Defense and Security Sustainability (Defense and Security Sustainability).

Asymmetric Information Theory

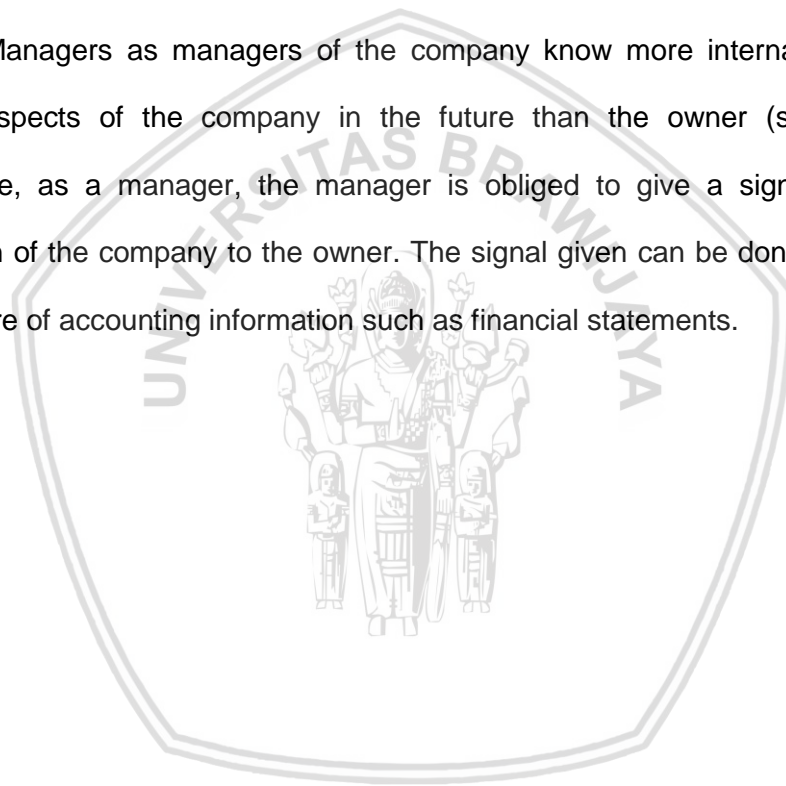
Information asymmetry is a condition where there is an imbalance of information acquisition between management as a provider of information with shareholders and stakeholders in general as users of information (user).

Asymmetry theory says that the parties to the company do not have the same information about the prospects and risks of the company. Certain parties have better information than others. Managers usually have better information

compared to outside parties (investors) because it can be said to occur asymmetry information between managers with investor. Investors who feel they have less information will try to interpret manager behavior. In other words, manager behavior is included in the behavior of determining capital structure.

More information owned by managers can trigger to perform actions that are in accordance with the wishes and interests to maximize utility for him. As for the owner of capital, in this case the investor, it will be difficult to effectively control the actions taken by the management because it has little information available.

Managers as managers of the company know more internal information and prospects of the company in the future than the owner (shareholders). Therefore, as a manager, the manager is obliged to give a signal about the condition of the company to the owner. The signal given can be done through the disclosure of accounting information such as financial statements.



CHAPTER III

RESEARCH METHODOLOGY

Lean Startup Method

This method is popularized by Eric Ries which contains about incubating new products and services, as well as extending the life cycle of a product by providing new value added. Starting from the definition of the startup itself, Eric Ries explains that startup is an institution designed to create new products or services under extreme uncertainty (Boland et al, 2013).

Rasmussen and Tanev (2015) explained that theoretical foundation for conceptualizing a lean global startup as a special new type of firm:

1. The emergent nature of their business models, where every specific business model framework is becoming just a template for the development of a viable business model.
2. The inherently relational nature of the (global) resource allocation processes.
3. The integration of the hypothesis-driven and effectual entrepreneurial perspectives.
4. The integration of the entrepreneurial, effectual, and technology marketing perspectives.
5. The need to deal with the high degree of uncertainties associated with the overall business, marketing, technology innovation, and operational environment, including the uncertainty associated with cross-border business operations.
6. Linking the ex-ante characteristics of lean startups with the ex-post characteristics of born-global firms in order to develop technology

adoption marketing perspective considering the “crossing the chasm” process as a successful entry into a global market niche.

From these explanations can be translated in more detail as:

- a. Stubs with newproducts/services.

Pilot companies have uncertainty about market acceptance of their products/solutions, direction of product development, fund sustainability, culture teamwork and so on.

- b. New Division in a company that wants to create breakthrough innovation newproducts/services.

A new division that has uncertainty regarding market acceptance of products/solutions to be created, unbuilt culture teamwork (similar to a startup), but perhaps the direction of product development, funding and business relations may be more clearly derived from the parent company of the new division.

- c. The existing division within the company that wants to build new product/serviceinnovations.

For this point, it is obvious to have experience in product development, business relationships, and a more qualified teamworkwork. Conditions of uncertainty are due to market acceptance of new products/services to be built. Conditions of extreme uncertainty is on the ignorance whether the solution to be built quite fit/acceptable for the market or not. Then after taking consensus and likening perceptions of the term startup, it can proceed to the definition of leanstartup.

The Lean Startup method is a method that focuses on the rapid creation of prototypes with the purpose of assumption testing. The uniqueness ofthe

methodology consists of its ability to explicitly take into account the numerous uncertainties regarding the suitability of a given solution towards a specific customer problem (Rasmussen and Tanev, 2015). Customer feedback is used to drive each iteration that allows for faster evolution than traditional processes.

MarketValidation

Market Validation is the stage to ensure that the assumption of the problem we define really exists, happens to many people, is an important problem and so on. There is also a call this stage as the 'Market Development/CustomerDevelopment'.

ProductValidation

Product Validation is the stage to ensure that the solution/solution prototype concept is built is the most appropriate/most effective one that can answer the valid problem in stage-1. There is also mention of this stage as the 'Creation of MVP (Minimum Viable Product)' stage. At this stage mock-up/prototype is required. Lean startup approach takes a definitive new product development perspective and focuses on the challenges associated with moving across the stages of a specific technology adoption life- cycle, whereas research on born-global firms rarely discusses the challenges associated with the development of new offerings and focuses on the global marketing impact of competitive innovative products based on technological excellence or network effects (Rasmussen and Tanev, 2015).

Business Validation

Business Validation is the stage to ensure that from the process of solving the problem with the solution does have business value, can also find the most appropriate business model for the solution problem scheme that is valid at stage-1 & stage-2. The best business model is one that has sustainable & growing character. Sustainable in the sense that it will last forever (if possible) and grow exponentially, where revenues can be triggered to grow exponentially and expenditure can be reduced to grow in a linear fashion.

If correlated with organizational structure, phases 1 and 3 can be done by the business & marketing development team. While stage 2 had could be done by technical team of product development. Indeed, to run this method ideally required a joint team of 3 aspects: business, design & engineer. Implementation of this lean startup method can provide some benefits as follows:

1. Minimizes the risk of product failure when it is published to the market.
2. Avoid large investment early in the manufacture of products, although not necessarily when the product is completed can be accepted by the market.
3. Speed in market occupancy and 'time to market' of products
4. Faster feedback, faster product maturity, faster business maturity
(Rapid build -> measure -> learn cycles)
5. Invest in learning, not only asset

By adopting this concept, culture product development can be built by creating products that suit the market needs.

CHAPTER IV

FINDINGS AND DISCUSSION

Framework of Object of Study

Indonesia is the largest archipelagic country in the world rich in abundant resources, especially marine resources such as fish. However, not only in the sea alone we also have enormous potential in the agricultural sector of fresh fish. Nevertheless, our country's fish consumption is still around 31.5 kg per year, very much when compared with Malaysian countries whose consumption rate can reach 55.4 kg per year. With a good projection of economic growth, the level of consumption of Indonesian society is increasing, coupled with the existence of government programs that are currently intensively conducted are fond of eating fish campaigned by the Ministry of Marine Affairs and Fisheries.

Owning a business in the fish sector itself is one of the current trends, not only among businessmen or middle-low farmers but this sector is also ogled by domestic big companies. As a result this makes the fishery sector stronger and not a few foreign companies also invest and do a lot of cooperation with companies or local farmers. With the potential of domestic fishery is very good, Indonesia should be able to become a maritime axis of the world.

As the largest archipelagic country in the world with 1.9 million m² of territory is not in doubt Indonesia has great marine potential of Indonesian marine products and even contributes to the world's fisheries. The export of Indonesian marine products is dominated by shrimp, anchovy, crab, seaweed, and tuna. According to data from the Food and Agriculture Organization (FAO), Indonesia is included in the list of 10 largest fish producing countries in the world. Indonesia is second only to China with 6 million tons of fish followed by the United States,

Russia and Japan. Based on data from the Central Bureau of Statistics (BPS), the countries that are the biggest importers for Indonesia are China 344,374 tons, Thailand 198.871 tons, and Japan 108,847 tons. The value of exports also increased to several destinations such as China, Japan and the European Union. However, the hope to become the number 1 exporter in the world is still difficult to be realized because Indonesia still faces several obstacles such as the rise of fish theft and the declining number of fishermen. Many people expect the cooperation of various parties and the government's decisive action so that Indonesia can become the largest fishery exporter in the world.

In response to this potential, the central government and local government conducted the socialization of freshwater fish and sea fish. But the number of factors that cause government programs can not be absorbed well, especially by farmers in the area, this is very unfortunate considering the potential of fresh fish and sea fish is very good. With startup-oriented technological innovation: My Iwa presents one solution as a media container that focuses and communicates everything about fish and most importantly becomes a liaison for farmers, buyers and governments to do activities that can optimize the potential of freshwater fish and fish. Through IWAKU, farmers can know the latest developments about fresh fish and marine fish both in terms of fish breeding techniques, fish cultivation, as well as technology supporting the cultivation of fresh fish and sea fish. My Iwa also provides ease of access for buyers to communicate directly with local farmers, with open access potential of freshwater fish and sea fish will be very easy in the can. And that is not less important IWAKU can also be one of communication solutions between the government and farmers, so that government programs can be distributed properly.

FisheriesPotency

Based on the results of the Geospatial Information Agency (BIG) research in 2014, Indonesia has 99.093 km of coastline. Therefore, the utilization of fishery resources is absolutely necessary so that Indonesia can become a maritime axis of the world. In 2009, the level of fish provision for Indonesian consumption far exceeded the world population, which was 30kg/capita/year (KKP, 2009). Coupled with the geo-political situation of Indonesia is located in the crossing zone of the world into a profit and added value if Indonesia is able to encourage the modernization of the fishery industry sector. In Indonesia, public awareness of the importance of healthy food is increasingly seen along with the increase in fish consumption compared with meat consumption. This condition is evidenced by the development of increased consumption of fish from 2013 to 2014. The level of fish consumption and availability of fish for consumption both increased. Table 4.1 below illustrates the consumption of fish in Indonesia in 2010-2014.

Table 4.1 Provision of fish for consumption, fish numbers, and nutritional availability of fish per capita, 2010-2014

Item		Year					Increasing Average (%)	
		2010	2011	2012	2013	2014	2010-2014	2013-2014
Fish Providers	Total (1000 ton)	9,199	10,282	11,588	11,882	13,072	9.50	10.01
	Per capita (kg/cap/year)	38.39	42.49	47.22	47.77	51.80	7.85	8.44
Fish Consumption	Per Capita (kg/cap/year)	30.48	32.25	33.89	35.21	38.14	5.78	8.32
Availability of Nutrition	Calory (kcal/cap/day)	66.00	72.00	82.00	164.00	186.00	34.38	13.41
	Protein (gram/cap/day)	11.65	12.73	14.74	10.73	11.54	1.34	7.55
	Fat (gram/cap/day)	1.53	1.70	1.83	1.58	1.75	4.00	10.76

Source: Indonesian Central Agency of Statistics (BPS)

Provision of fish consumption from 2010-2014 always increases every year. The condition is a good signal for Indonesia, but it should be noted that the increase is not too significant. New policy is needed to increase people's interest

in consuming fish. Increased consumption must also be accompanied by increased fishery production. Opportunity of development of fishery business of Indonesia have very high prospect. The economic potential of marine and fishery resources that can be utilized to boost economic growth is estimated at USD 82 billion per year.

The sustainable potential of Indonesia's marine fish resources of 6.5 million tons per year is spread over Indonesia's territorial waters and the Indonesian Exclusive Economic Zone (ZEEI) waters, which are divided into nine major waters of Indonesia. Of all the potential resources, in order to maintain the sustainability of fish stocks the number of permissible catch (JTB) of 5.12 million tons per year.

Table 4.2 Potential of cultivated land and fishery utilization rate, 2014

Type of Aquaculture	Potency (Ha)	Usage (Ha)	Developing Opportunity (Ha)	Percentage of Usage Aquaculture Area (%)
Brackishwater Pond	2,964,331	667,083	2,297,249	22.50
Freshwater Pond	541,100	161,387	379,713	29.83
Inland Open Water	158,125	1,707	156,418	1.08
Rice Fish	1,536,289	142,122	1,394,167	9.25
Marineculture	12,123,383	281,474	11,841,909	2.32

Source: Indonesian Central Agency of Statistics (BPS)

From Table 4.2, the five types of cultivation in Indonesia in 2014 are still far from 50%. So in the future, still wide open potential in the field of fishery cultivation. As a consideration, marine aquaculture has an area of 8.3 million hectares, consisting of 20 percent for fish cultivation, 10 percent for cultivation of barrels, 60 percent for seaweed cultivation, and 10 percent for others. Second is the cultivation of brackish water fisheries or ponds with an area of approximately million hectares. Third is freshwater aquaculture fisheries that have an area of about 2.2 million hectares, consisting of 526,40 thousand hectares of ponds;

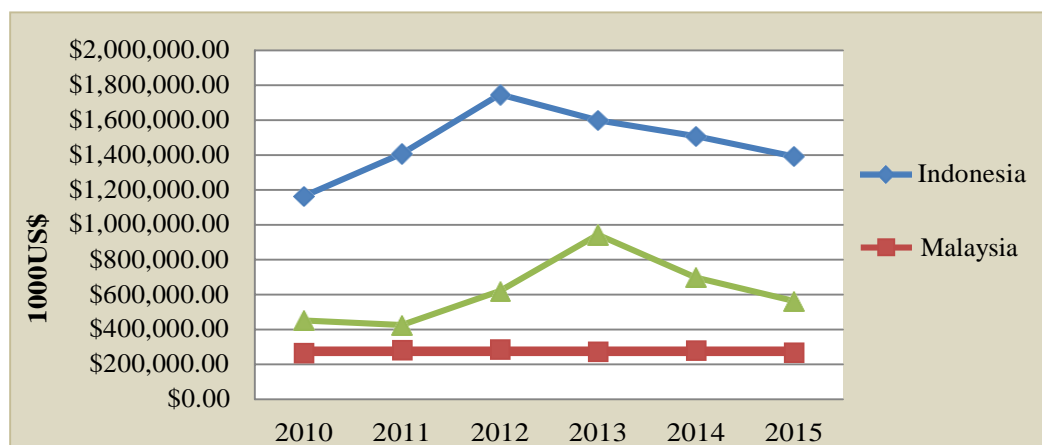
public waters (lakes, reservoirs, rivers, and swamps) covering an area of 158.2 thousand hectares; and rice fields for 1.55 million hectares of rice fields. When viewed closely, it is not surprising that the production of Indonesian fishery products is still far from satisfactory levels. This impacts on the scarcity of some fish production and rising fish prices in the market. Indonesia which in fact is ranked second countries with longest coastline will be the importer of fishery products. Table 4.3 will illustrate how far the comparison of Indonesia's production with China has lower coastline but is able to utilize it well.

Table 4.3 Freshwater fish production (in tons)

Country	2010	2011	2012	2013	2014	2015
China	21,955,182	23,126,604	24,641,504	26,131,509	27,332,035	28,428,422
Indonesia	1,651,251	2,063,810	2,462,677	2,956,846	3,244,595	3,328,503

Source: FAO - Fisheries and Aquaculture Information and Statistics Branch

The first position on the number of capture fisheries production in freshwater is also occupied by China, while Indonesia is ranked 7th (FAO, 2016). This can be seen in Table 4.3 where Indonesia is far below the PRC in the tonnage of freshwater fishery products. This is because in the period 2010-2015, fishery sector is still dominated by fishermen who still use traditional techniques. From these data, then the updating of technology and managerial education in the fisheries sector is the shortage of Indonesia. Strengthening the fisheries sector must be based on the synergy between government, business actors, and consumers so that the future is able to continue the positive trend.

Figure 4.1 Non-crustacean fish export value (in 1000 US \$)

Source: FAO - Fisheries and Aquaculture Information and Statistics Branch

In the ASEAN crossing zone, Indonesia's fishery sector is also competing with Malaysia and the Philippines. In Figure 4.1 it can be seen that overall, the value of Indonesian exports exceeds both countries. However, from 2012 to 2015, Indonesia experienced a decline in fishery exports which also occurred in Malaysia a yearlater.

This decline in the value of Indonesian fish exports reflects that Indonesia carries a heavy burden to achieve its ideals as a maritime axis. Reported by Warta Ekonomi, Indonesian Chamber of Commerce for Sector of Sovereignty and Fisheries explained problems in the field of marine and fisheries, among others:

1. Not yet optimal production of national aquaculture (fish and seaweed) and capture fisheries production in ZEEI and the open seas as a source of fisheryfood;
2. Not optimal growth of GDP offishery;
3. The management of small islands as economicpower;
4. Not optimal fishery processing industry, especially in eastern part of Indonesia;

5. The availability of fuel for fishermen and fishcultivation;
6. Not yet optimal supervision of illegal, unreported, and unregulated (IUU) fishing;
7. Increased national marine conversion area;
8. Increasing the capacity of marine and fishery human resources;
9. Improvement of marine science and technology and fisheries and technology dissemination;
10. Improved governance of national marine and fisheries development.

It also reported that Yugi Prayanto, Vice Chairman of Kadin for Marine and Fisheries Affair added that beside those problems of fisheries, fisheries sector in eastern part of Indonesia is not followed by improvements in the quality of processing. Marine and fishery sector should be able to become one of the superior for economic development for eastern region. The number of potential business actors hampered by the lack of knowledge and experience of exports and the high cost of logistics makes the fishery sector income is not maximal. Central government assistance such as production and export training and the addition of supporting infrastructure are absolutely necessary so that in the future, the fishery sector can succeed in eastern Indonesia.

The Government of Indonesia should be able to provide not only supporting facilities and infrastructure in the fishery sector but also the regulatory firmness that minimizes crime in the field of fisheries and marine. Since Joko Widodo has served as President of the Republic of Indonesia and Susi Pujiastuti has served as Minister of Fisheries and Marine Affairs, hopes for improved policy and infrastructure will be realized. The first step taken is the temporary suspension (moratorium) of Capture Fishery Business License in the territory of fisheries management of the Republic of Indonesia.

After that, reported by Andreas (2017), Susi Pujiastuti claimed that until 2017, there were 318 large thief fishing boats that have been detonated. The fishing boats come from various countries including Vietnam, Philippines, China, Malaysia, Thailand and Papua New Guinea. Based on Kompas.com reporting dated April 18, 2017, Director General of Marine and Fishery Resources Supervision, Eko Djarmo said that the impact of the ship's sinking policy is the increasing of fishermen exchange rate. The exchange rate of fishermen at the beginning of 2017 reached 110. That number has increased compared to 2016, which stated 105.

Also as a step to improve the supporting facilities in this case the logistics of fishery products, the government through the Central KIPM (Fish Quarantine, Quality Assurance and Security of Fishery Products) Jakarta I held a Coordination Meeting of Logistics Distribution of Fishery Products and Aviation Security on 20 February 2016 at Balai Besar KIPM Jakarta I. With this step, in the future it is expected that the level of supervision and control over fishery commodities will be better. Moreover, the improvement of law enforcement on illegal commodity shipping activities or harming the preservation of marine and fishery resources can be mitigated optimally.

Improving the quality of regulations and systems from the start of fishing activities to the logistics of fishery products should be able to maximize the maritime economy. David Setia Maradong (2016) mentioned some of positive results of these efforts are as follows:

- There is an increase in the number of trips to sea in some areas from 2-3 trips / week to 7 trips / week (reduced fishing ground distance from 4 miles to 2 miles). In addition, production in the Port of Ocean Fishery rose 5.16% and in Fishery Port increased 11.48%;

- Productivity increases for ship size <10 GT (1.9%), 10 - <30 GT (40.6%), and 30 - 100 GT(52.4%);
- National Fuel Savings (BBM) at36%;
- Growth of Gross Domestic Product (GDP) of Fisheries reached 8.64% (quarter I 2015) which in economic scale amounted to Rp.67.08trillion;
- Export value reached USD906.77 million in first quarter2015.

The potential of the fisheries and marine sector of Indonesia is very large, especially from the aquaculture sector. The role of the younger generation in the fisheries and marine sector is as a milestone and the relocation of problems in the past. The younger generation has a central role in utilizing the potential of fisheries. Because if the younger generation does not care about fishery and marine resources, the resources will be plundered by the world community and geographical position will be exploited by other countries. Indonesia will then become a country of viewers, traffic guards without benefits and a pollution discharges generated from variousactivities.

As a young generation, there needs to be a container for discussion and taking concrete action in pelesetarian and cultivation of fishery products. But the phenomenon that occurs today, the majority of young people is less interested to pursue business in the field of fisheries. This can be seen from the lack of number of young fish entrepreneurs and the decline in the number of young people who enter the school of fisheries (vocational) fisheries. Especially if seen from graduates of vocational schools or universities majoring in fisheries who continue their business in the aquaculturesector.

Youth generally think fisheries are a tiring, boring work field, and to get a satisfactory result it has to work furiously and wait a long time to harvest it. It is also undeniable that the stigma of the people who think that the sector of fisheries cultivation is the work of the lower classes. Young people'signorance

about the knowledge and economy of the fishery sector is also a constraint when young people start businesses in this sector.

The strength of Indonesia's maritime sector can be built by improving the quality of human resources, industry, competitiveness and protection of human resources. If these aspects are not considered, then the maritime sector of Indonesia will not be competitive. The competitive word here can be understood that millennial youths are expected to create improved systems and digitalization both in the field of aquaculture and the updating of fishing techniques at sea.

A new concept in the world of fisheries and marine is already awaited, the fishery sector should be concerned with quality and quantity, so that the distribution process quickly and also the price must be affordable. In addition to the system, the key to building quality human resources in the maritime sector is to transform education curriculum, especially related to fishery and marine.

Quality improvement should be based on good education as well. Professional certification programs for fishermen are also important as most fishermen have insufficient educational value. The curriculum of fisheries and marine education should also adapt technological developments and tastes of the ever-changing younger generation. The maritime industry includes a dynamic industry, every business actor must be able to adapt with new technology so as to create opportunities can also learn from the failures that occur.

Concept of the Application

The concept of IWAKU application with smartphone based will provide various information about fish potency which owned by Indonesia. Through IWAKU, we will strive to provide direct access between buyers and farmers by providing a special buying and selling platform, this feature we call the Fish

Market. The fish traded are marine and fresh fish from local farmers. IWAKU application will also provide information on the benefits of various fish to be purchased. IWAKU will be a new breakthrough application with fish commodity traded. With the presence of IWAKU, we can stimulate the young generation to start utilizing the fish potential in Indonesia to be managed together and become a new breakthrough in the fishery world and farmers have new options to learn new things in the fishery world in the hope that farmers can start their own path to the world.

Feature of the Application

In general, IWAKU applications have in common with other smartphone applications. First, when finished downloading the application, it will be faced with the choice of language usage to be used in the application. The next page will appear as an introduction to the application IWAKU, so that users generally understand what is the mission and background behind IWAKU. Having seen and read about IWAKU can go to the news page where IWAKU presents the world's first news platform that specifically tells everything about fishery commodities both in Indonesia and in the world.

The Fish Market, a specialized fish buying and selling platform that we present openly to local farmers as well as to young people looking to start a business or even looking for fish will be able to easily find all kinds of fish in this feature. Of course to provide security for buyers and farmers, anyone who wants to use this feature is required to register first. If you select a login page, it will appear a login dashboard that will require a username and password. Meanwhile, if you choose the registration page, the user will be given a register account as a Buyer user or as a Seller's user. After selecting one will proceed to the page to fill

in user information such as name, address, phone number, and email.

Image of First Frame IWAKU



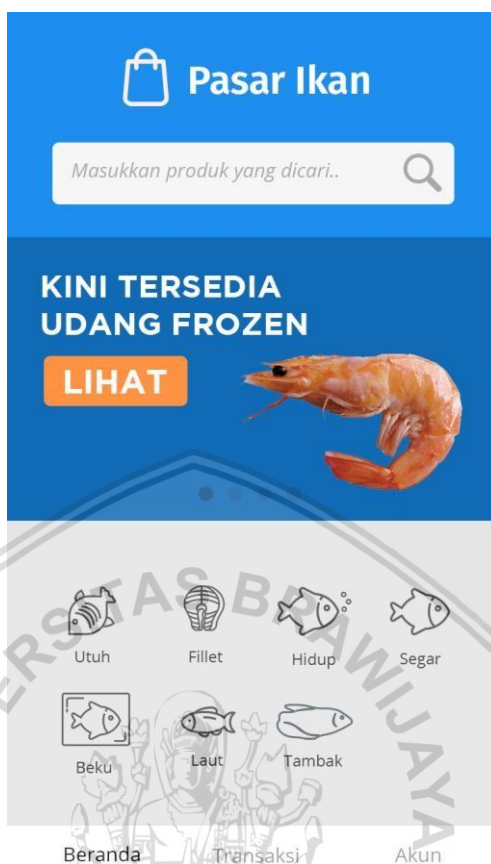
Image of Timeline News IWAKU



Image of Swipe Fitur



Image of Pasar Ikan



Procedure of Application Usage

A. Downloading and installing applications

Users who want to use the app must download and install IWAKU apps in Google playstore and iOS appstore.

B. Registration and Login

After completing the download and installation then the user can register or register. If you already have a user identification, then you can login into the application.

C. Application usage

The use of the application is fully submitted to the needs of users of the IWAKU application in their respective needs based on login access provided.

Application Implementation Strategy

IWAKU application has effective strategies that can be useful for the people of Indonesia. To implement the IWAKU application, it needed some things that is cooperation with related parties such as software developers for application design, fish farmers to recruit as fish sellers, investors for funding, and socialization and promotion for IWAKU. These steps are necessary for the operation of the IWAKU application, because all parties will be actively involved in the operation.

1. Cooperation is important to prepare applications with related parties consist of:

- a. Software Developer

Parties developing apps and apps for inclusion into google playstore and iOS appstore.

- b. Employee recruitment

A party that searches to hire employees to become a IWAKU managerial startup company.

- c. Customer service

The party that will do everything related to the customer is between buyer-seller, seller-managerial, buyer-managerial.

- d. Society

Indonesian people who will be potential users of IWAKU is needed as the development of the application path.

e. Researchers

Researchers have a huge role to develop applications by foreseeing at local potentials, those are the sellers and buyers have products that will be sold on IWAKU. In addition to having a role to see the potential, researchers have a role to conduct questionnaires of evaluations for IWAKU deployment as to see the shortcomings of the application.

2. Building the Design of Application

This stage is related with the prototype of the application as well as filling the inside contents linked by the product development strategy, that is creating an attractive design on the user interface and feature of IWAKU application. The steps are:

- a. Assign the homepage logo and setting the design of menu of IWAKU application,
- b. Develop the database and server of the application,
- c. Develop a different layout setting between buyer and seller,
- d. Setting a good user interface to make it handy for users, and
- e. Updating the feature periodically.

After the application development is designed, it is also necessary to do some technical and nontechnical tests. This technical test is done by testing the application server that has been built, and testing the relationship between buyers and sellers, in the field. Non-technical trials are carried out with application feasibility tests on buyers and sellers. This is done to determine the ease of application interfaces for users with different needs and measure user interest in application design.

3. Finding Investors for Funding

In the making of a national-scale application and project, it usually requires a complex and expensive budget. Therefore, it needs support from

investors who are willing to finance the execution process. The cost spent on making and developing an application depends on the specification of the application, the more features involved the greater the manufacturing cost. These costs include web creation, administrator, android app creation for sellers and buyers, hosting fees and annual domain openings, as well as the release of android apps on Google Playstore and AppStore on iOS.

4. Socialization and Application Promotion

Promotion and application socialization is done to provide information to the public. So it is expected that in the future not only the increased revenue, but also the use value of IWAKU applications. Promotional strategies that can be done is by flyering, banner placement promotion in strategic places, also the use of online advertising and social media endorsement.

Business Model Canvas

The Business Model Canvas or **BMC model** is a graphic representation of a number of variables that show the values of an organization. The Business Model Canvas can be deployed as a strategy tool for the development of a new organization. Furthermore, it also analyses the (business) situation of an existing business.

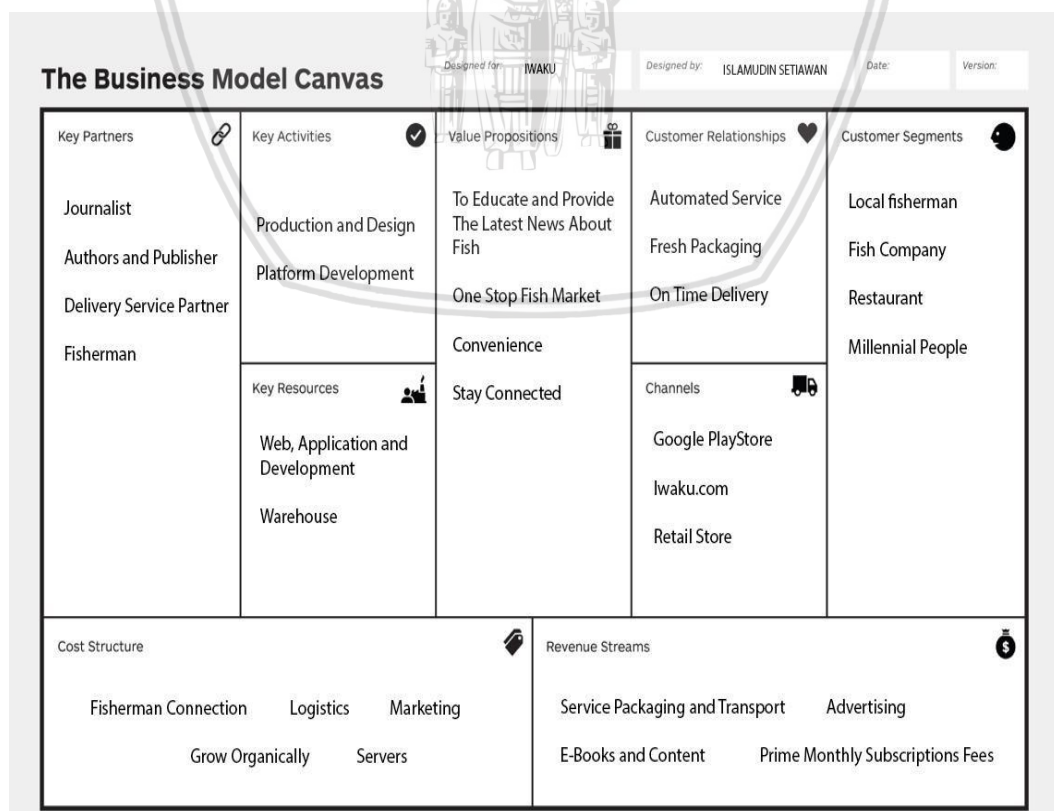
The Business Model Canvas was developed by the Swiss business model guru [Alexander Osterwalder](#) and management Information Systems professor [Yves Pigneur](#). They defined nine categories for the Business Model Canvas which they refer to as the building blocks of an organization.

The building block are:

1. Keypartners
2. Keyactivities

3. Keyresources
4. Valuepropositions
5. Customerrelationships
6. Channels
7. Customer segments
8. Cost structure
9. Revenuestreams

The performance of an existing organization can easily be improved using the Business Model Canvas. All company aspects are made clear at a glance because of the visual aspect. By looking at the developments per category, an organization can fine-tune its value proposition and structurally improve its strategy. When setting up a new company clear decisions can be made in advance using the Business Model Canvas.





CHAPTER V

CONCLUSION AND SUGGESTION

Conclusion

Innovation in the digital world is currently growing very rapidly in the process is not easy when it is building an innovation, but in the field of agriculture or fisheries is still underestimated. Author believes that all sectors have their potential depending on how to maximize them. As explained in Chapter 4, utilization of fisheries sectors in Indonesia still below 50%, so there needs to be support from the public and private sectors.

Economically, the supply in the field of fishery in Indonesia today needs to be modernized because the target market is the younger generation. But the lack of technological understanding for fishermen and fisheries entrepreneurs is the biggest obstacle. Inequality gap between West and East area of Indonesia must be reduced, because latest data found that East area has big potency and still 'green'. Entrepreneurship in East area also the important strateg to take along with modernization of fisheries equipment.

To that end, IWAKU responded to this great challenge. Through IWAKU, author provides new innovations in terms of education and online sales. Fish farmers and fishermen can now get detailed information about fresh fish and sea fish. Through the fish market, fish farmers and fishermen also have the option of selling online so they can get additional options in making sales.

As explained in Chapter 4, IWAKU focused on providing good accessibility and vary language to all users, both seller and buyer, thus can cover all society class and provide better information. Namely Fish Market, with avision

to provide not only transactional activity, but also empower all fisheries business with latest news about entrepreneurship and fisheries climate.

Because of that, IWAKU needs a good cooperation between public and private sector, and also better research team to foster the development. Then, IWAKU can maximize its accessibility with consumer feedback openly where farmers and fishermen have the freedom to make IWAKU better off. And most importantly, there needs to be socialization to some fishing village and business community where both businessmen and fishermen can know the value of IWAKU.

Suggestion

Based on the analysts and conclusions, the authors have some suggestions for those interested in starting a business in the fish sector, they are:

1. The potential that Indonesia has is very big has become the responsibility to maximize the potential owned then recognize the potential.
2. Decide in what sector the reader will start sea or bargain.
3. Discipline is the key, in the fish sector does have great potential but also has a big risk.
4. Updates on information and latest innovations will help the reader in conducting business activities in the fish sector.

The huge potential that Indonesia have and the market with such a high demand, having business in this sector is very promising but keep in mind the business with high potential also has a high risk. After having a business idea and pattern that has been established, prospective entrepreneurs in the fish sector must be good at following the development and innovation of fish in the

world, because changes and innovations are not always negative impact there is always a positive. In the end, author had dream that someday fish farmers and fishermen in Indonesia can make direct sales overseas without going through a broker which even makes it difficult for fish farmers and fishermen.

Have a nice try and best of luck.

